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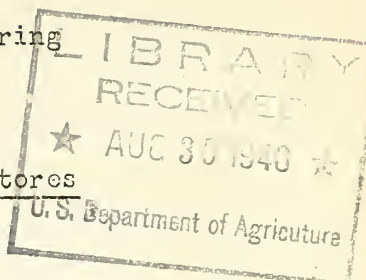
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UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Chemistry and Engineering
Naval Stores Research Division
Naval Stores Station, Olustee, Florida

A Study of the Cost of Production of Naval Stores

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As far back as our knowledge reaches, records of some sort have been kept and used and they have frequently formed the basis on which our knowledge rests. Knowledge of what has been done has always been a starting point and a guide for future achievement. Accounting records deal largely with the internal activities of a business, and a proper control and management of business affairs cannot be exercised without this information.

In a small business where the owner is in close contact with all the activities of his business, he does not need an elaborate system of records to indicate the condition of the business at any time, but he does need records of some sort which will give him reliable information to guide him in future activities. Memory cannot be relied upon to furnish this needed information.

Two types of information are necessary for a business man to properly control his business: information about his business, its activities and conditions; and information about other businesses in the same line of activities as his own.

The main purpose of keeping accounting records is to secure information concerning results of one's own business activities. The aim of all private business being the increase of wealth, the first problem of accounting records is to determine how much money is invested in a given business and what ownership exists at a given period, so that by comparison the increases and decreases in ownership may be accurately known. When accurate information is obtained, an intelligent plan of action can be adopted to remedy such ills of the business as are shown and to increase any profitable line of activity.

The naval stores producer who knows simply that his cash is \$1,000 less than it was at the corresponding time in the last fiscal period, has not the kind of control over his business that his competitor has who knows that the \$1,000 was paid for additional land or that his expenses for the period have been larger by \$1,000 than for the former period. If the naval stores producer definitely knows that his chipping, dipping, or hauling expenses are greater, by comparison, this year than for the previous year, he should be able to find out why they were greater and, if out of proportion to the amount of work performed, he can, in the future, take proper steps to prevent this loss. Several naval stores producers contacted, who did not keep accounting records, were sure they knew what it cost them to produce a unit of turpentine and rosin, but when asked for the costs of the different operations, the totals were found to vary from five to twenty-five dollars from the amount first given. The point should be clearly held in mind that the naval stores producer who knows exactly what is happening in his business is in a better position to exercise a definite and sure control over it.

The Naval Stores Research Division requires information concerning the cost of naval stores production to properly evaluate the improvements in processing and equipment and the reduction of losses made possible by the work of the Naval Stores Station and to compare the costs of these improvements in processing and equipment with the costs of the methods and equipment ordinarily used by naval stores producers. Also, the Naval Stores Research Division has been called upon by various producers and organizations to furnish reliable information on the costs of the different operations, materials, and equipment necessary for the production of turpentine and rosin.

One hundred and fifty-one operators in the States of Georgia, Florida, Alabama, and Mississippi were contacted. Because of the lack of accounting records, information concerning the costs of production was obtained from only sixty-three operators. Of these, the data obtained from only twenty-two were in sufficient detail to be useful to the Naval Stores Station.

Of the twenty-two naval stores operators from whom useful costs of production data were obtained, nine were in Florida, nine in Georgia, three in Alabama, and one in Mississippi. These operations ranged in size from five to over forty crops. Twelve were single operations; eight operated two or more camps; and two operators worked ahead of timber cutting. Additional data obtained are given in the following tables.

Table 1

INFORMATION PERTAINING TO SIZE OF OPERATIONS
FROM WHICH COSTS OF PRODUCTION DATA WERE OBTAINED

<u>Number of crops worked</u>		<u>Faces worked</u>		<u>Production</u>	
<u>Crops worked</u>	<u>Operations</u>	<u>Age</u>	<u>Percent</u>	<u>Operations</u>	<u>Units</u>
5 to 10	1	Virgin	22.8	10	Under 1000
10 to 15	3	Second year	21.2	9	1000 to 2000
15 to 20	5	Third year	20.8	3	Over 2000
20 to 30	5	Fourth year	12.7		
30 to 40	1	Fifth year and older	22.5		
Over 40	7				
			<u>High</u>	<u>Low</u>	<u>Average</u>
Number of crops worked			70.03	5.38	29.88
Barrels of gum dipped per crop			327	115	196.16
Production per crop - units			74.7	25.2	42.32
Production per operation - units			2521.5	234	1264.5
Operating expenses per unit			\$ 39.97	\$ 18.42	\$ 26.70
Overhead expenses per unit			\$ 45.16	\$ 3.22	\$ 17.79
Total expenses per unit			\$ 84.27	\$ 30.58	\$ 44.49
Operating expenses per crop - per year			\$1691.61	\$ 898.46	\$1130.05
Overhead expenses per crop - per year			\$2512.25	\$ 99.93	\$ 752.60
Total expenses per crop - per year			\$3888.08	\$1054.29	\$1882.65

Table 2

WAGES PAID TO EMPLOYEES

<u>Type of work</u>	<u>High</u>	<u>Low</u>	<u>Average</u>
Hanging and raising cups:			
Ax man per 100	\$.50	\$.125	\$.29
Maul man per 100	.50	.125	.29
Chipper per 1000 (lead streak)	2.00	1.00	1.15
Distributor per 100	.20	.075	.10
Nailer per 100	.50	.08	.35
Tally man per day	1.25	1.25	1.25
Chipping per 1000	1.50	.75	.97
Dipping per barrel	1.00	.55	.675
Scraping per barrel	1.15	.75	.93
Raking per 100	.60	.50	.50
Woodsrider per month	75.00	40.00	56.25
Teamsters per day	1.25	1.00	1.20
Truckdrivers per day	1.35	1.00	1.20
Stiller per month	60.00	35.00	45.00
Deck hand per charge	1.00	.50	.73

In addition to the above, employees were usually furnished living quarters. Several factors influence wages paid; namely, distance of timber from camp, scattered or bunched timber, open woods or heavy undergrowth, amount of timber in wet or swampy places, age of faces worked, and sometimes age of employees as for some work young boys could be used as well as men.

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AVERAGE COST OF PRODUCTION
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	Per unit	Per barrel of gum
Winter Expenses:		
Hanging and raising cups	\$ 2.43	\$.53
Cleaning cups	.13	.03
Fire protection	<u>.58</u> \$ 3.14	<u>.12</u> \$.68
Cost of Producing Gum:		
Chipping	7.69	1.67
Dipping	3.37	.73
Woodsriders	2.47	.54
Tools	.41	.09
Miscellaneous	<u>.23</u> 14.17	<u>.05</u> 3.08
Cost of Hauling:		
Labor	1.27	.21
Barn and feed	1.47	.32
Trucks - gas, oil and repairs	2.26	.49
Miscellaneous	<u>.01</u> 5.01 (a)	<u>.07</u> 1.09 (a)
Cost of Processing:		
Labor	.95	.21
Still supplies	.56	.12
Cooperage	2.68 (b)	.58 (b)
Miscellaneous	<u>.19</u> 4.38	<u>.04</u> .95
Total Operating Expenses:	26.70 (c)	5.80 (c)
Overhead and General Expenses:		
Maintenance and repairs	.35	.08
Supervision	2.12	.46
Office salaries	.85	.18
Office expenses	.24	.05
Telephone and telegraph	.12	.03
Lights	.04	.01
Rents	.21	.05
Travel expense	.11	.02
Auto expense	.21	.05
Inspection	.17	.04
Lease and timber depletion	6.04 (d)	1.31 (d)
Depreciation	3.25	.71
Insurance	.29	.06
Legal expense	.24	.05
Interest	1.86	.40
Taxes and license	.72	.16
Bad debts	.46	.10
Recruiting	.04	.01
Roads and bridges	.02	
Water works	.01	
Shipping	.12	.03
Miscellaneous	<u>.32</u> 17.79	<u>.07</u> 3.87
Total cost of production and Processing:	\$44.49	\$9.67

(See next page for footnotes a,b,c,d.)

- (a) Includes all hauling, such as labor to and from woods and wood for still.
- (b) Several of the producers shipped their turpentine in tank cars and, therefore, had no expense for spirit barrels. The average cost per unit for spirits and rosin barrels should be about \$5.00.
- (c) Does not include any depreciation.
- (d) If the producer owned his land and practiced recommended forest management, timber depletion could be eliminated.

Table 4

SUGGESTED RECORD OF EXPENDITURES FOR
SMALL NAVAL STORES PRODUCERS OR GUM FARMERS

(1) <u>Date</u>	(2) <u>Name</u>	(3) <u>Explanation</u>	(4) <u>Investments</u>	(5) <u>Sales Income</u>	(6) <u>Expenses</u>
Mar. 1	John Doe	Cups & gutters	\$500.00		
6	Jim Brown	Chipping			\$10.00
10	Doe Company	Batting			18.50
12	Factor	4 bbls. Turp.		\$75.00	
15	Smith Service Sta.	Gasoline			15.00
17	Truck Company	Truck	\$750.00		

Explanation:

- (1) The column headed "Date" is self-explanatory.
- (2) The name of the person or company to whom the money was paid or from whom the money was received should be shown in this column.
- (3) In this column give some explanation of why or for what the money was received or paid.
- (4) The amount paid for all materials or supplies that will last for more than one year should be entered in this column.
- (5) The amount received from sales of turpentine, rosin or other products is to be entered in this column.
- (6) In this column enter amounts paid out for such supplies that will last only one year or less, repairs, chipping, dipping, hauling, and cooperage.

If more detailed information of expenses is desired, wider paper with more columns can be used and "Expenses" can be subdivided, using a separate column for each subdivision. The following table shows some of the subdivisions that can be made.

Table 5

EXPENSES:	(Winter Expense	(Hanging cups (Raising cups (Cleaning cups (Fire protection
	(Woods Expense	(Chipping (Dipping (Woodsrider (Tools
	(Hauling Expense	(Labor (Barn and feed (Truck - gas and oil (Truck - repairs
	(Stilling Expense	(Labor (Still supplies (Still repairs (Cooperage (Fuel
	(Miscellaneous	(Taxes and license (Interest (Insurance (Repairs - general

These sheets, if more than one should be needed per month, should be totaled monthly; that is, the amounts entered in each column are to be added and the sum shown at the bottom of the column, and a new sheet started the first of each month. At the end of the year or season an accountant can be employed to prepare a "Balance Sheet" and an "Operating Statement." This should not be very expensive, if the sheets are accurately prepared and, if the information obtained is properly used, it should be of great value to the producer.

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